

REMARKS

Rejections under 35 U.S.C. § 112, ¶ 2

The Applicant acknowledges the Examiner's claim rejections under 35 U.S.C. § 112, ¶ 2. According to the Office Action, claims 1-8 and 20-23 stand rejected as "indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention." The Applicant respectfully disagrees with the Examiner. Independent claims 1 and 8 both recite metal tubes "standardized for use in vehicle exhaust systems." The Examiner has rejected this language as "unclear to claim a vehicle structure with respect to a different and uninvolved device." The Examiner has further stated that there is no "standard" tube for a vehicle exhaust system. Applicants traverse the Examiner's rejection. As explained in the application, in the automotive industry, suspension subframes are typically made of a thick gauged steel material. On the other hand, the tubes that are used for vehicle exhaust systems are generally thin gauged and lighter. It is standard in the industry for a tube for an exhaust system to have a thinner gauge than an equivalent length of suspension subframe tubing. As such, vehicle exhaust tubing would not, on its own, be interchangeable with suspension subframe tubing but for the disclosure of the present invention. As such, the Applicant asserts that the term "standardized" is clear in view of the present disclosure. However, to expedite allowance of the pending application, Applicant has amended claims 1-4, 7-8, and 20 to specify "thin gauged metal tubes." Additionally, Applicant has amended claims 1 and 8 to replace "standardized" with "suitable for use in vehicle exhaust systems" to clarify the types of materials used. Support for these changes can be found in the specification on pages 2 and 3. Independent claims 1 and 8, therefore, both overcome the Examiner's rejection under 35 U.S.C. §112.

Since claims 2-7 and 20-23 are dependent on claim 1, these claims also overcome the Examiner's rejection. Applicants therefore request that the Examiner withdraw his rejection of claims 1-8 and 20-23 under 35 U.S.C. §112.

Rejections under 35 U.S.C. § 103

The Examiner has rejected claims 1-8 and 20-23 under 35 U.S.C. § 103 as being unpatentable over Kunert et al., U.S. Patent No. 6,511,096 in view of Wycech, U.S. Patent No. 6,233,826 in view of Japanese patent JP 405278049A to Kato *et al* ("Kato"). The rejected claims are not made obvious by the combination of Kunert and Wycech since a person of ordinary skill in the art would not have combined the tubing teachings of Kunert with the foam teachings of Wycech and/or Kato. Kunert discloses a "subframe for a motor vehicle, particularly for a rear axel of a motor vehicle". (Kunert at col. 1, ll. 9-10). Kunert does not disclose the use of an expanding foam in a metal tube to increase the strength of the metal tube. Further, Kunert does not disclose the use of tubing suitable for use in vehicle exhaust systems to construct the suspension. Even though the specification of Kunert suggests a "light metal or iron material," at no time does Kunert suggest a tube of the type used in a vehicle exhaust system. In fact, since thick gauge tubes are necessary in the absence of a structural foam to absorb the shock experienced by the vehicle suspension, the tubes used in Kunert must be of the thick gauged suspension assembly type, and not of a thin gauged vehicle exhaust type.

Furthermore, with the thick gauge of the Kunert tubes, additional structural support via a structural foam, is not necessary to provide additional strength. In fact, the addition of the foam would only increase the weight of the suspension subframe without providing a significant increase in strength. As such, there would be no motivation to combine the thick gauged suspension tubing of Kunert with a structural foam as in Wycech. Instead, Kunert teaches away from the combination of thin gauged tubing with an expanding foam to increase the strength of a thin gauged metal tube.

Wycech also does not provide a motivation to combine with Kunert. Wycech is directed to a method of using a flexible tube to inject foam into small, hard to reach areas. Wycech does not disclose or claim the use of thin gauged tubes which are suitable for use as vehicle exhaust components as capable of being strengthened with foam to the point of being usable as a suspension component. As such, there would be no motivation to combine structural foam as in Wycech with the thick gauged suspension tubing of Kunert. Instead, Wycech teaches away from the combination of an expanding foam with thin gauged vehicle exhaust tubing for use as a suspension

component since vehicle exhaust tubing typically does not have small hard to reach areas. Furthermore, for exhaust tubing to be used as a suspension component, substantially all of the exhaust tubing would need to be filled with structural foam. Wycech teaches away from substantially filling a thin gauged metal tube with an expanding foam to increase the strength of the tube, and instead, is directed at providing local reinforcement of a region of a hollow part.

Additionally, there would be no motivation to combine the thick gauged suspension tubing of Kunert with a structural foam as disclosed in Kato. Due to the thick gauge of the Kunert tubes, the additional structural support from a structural foam disclosed in Kato is not necessary to provide additional strength. In fact, the addition of the foam would only increase the weight of the suspension subframe without providing a significant increase in strength. As such, there would be no motivation to combine the thick gauged suspension tubing of Kunert with a structural foam as in Kato. Instead, Kunert teaches away from the combination of thin gauged tubing with an expanding foam to increase the strength of a thin gauged metal tube.

Kato does not disclose or claim the use of thin gauged tubes, suitable for use as vehicle exhaust components, as capable of being strengthened with foam to the point of being usable as a suspension component. Kato is directed to the use of a bag to contain the expanding foam so that only a specific part of a hollow member is filled with foam. Kato does not disclose or claim the use of thin gauged tubes which are suitable for use as vehicle exhaust components as capable of being strengthened with foam to the point of being usable as a suspension component. As such, there would be no motivation to combine structural foam as in Kato with the thick gauged suspension tubing of Kunert. Instead, Kato teaches away from the combination of an expanding foam with thin gauged vehicle exhaust tubing for use as a suspension component because in order for vehicle exhaust tubing to be used as a suspension component, substantially all of the exhaust tubing would need to be filled with structural foam. Wycech teaches away from substantially filling a thin gauged metal tube with an expanding foam to increase the strength of the tube, and instead, is directed at providing local reinforcement of a region of a hollow part.

Thus, Kunert, alone or in combination with Wycech or Kato, does not suggest the arrangement of either claim 1 or claim 8, and these claims therefore overcome the §103(a) rejection.

Since claims 2-7 and 20-23 are dependent on claim 1, these claims are also not anticipated or suggested by Kunert, alone or in combination with Wycech or Kato. Applicants request that the Examiner withdraw his rejection to claims 1-8 and 20-23 under 35 U.S.C. §103(a) with respect to these references. Therefore, the Applicant asserts that claims 1-8 and 20-23 now overcome the Examiner's 35 U.S.C. § 103 rejection.

SUMMARY

Pending Claims 1-8 and 20-23 as amended are patentable. Applicant respectfully requests the Examiner grant early allowance of this application. The Examiner is invited to contact the undersigned attorneys for the Applicant via telephone if such communication would expedite this application.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'M. D. Weis', is written over a horizontal line.

Mark D. Weis
Registration No. 48,826
Attorney for Applicant

BRINKS HOFER GILSON & LIONE
P.O. BOX 10395
CHICAGO, ILLINOIS 60610
(312) 321-4200